

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte MARTIN J. STEFFENSMEIER, RANDY A. NAEVE,
THOMAS C. ROHR, and LINLEY E. WOELK

Appeal 2007-3105
Application 09/648,830
Technology Center 2600

Decided: December 14, 2007

Before JOSEPH F. RUGGIERO, JOHN A. JEFFERY
and KEVIN F. TURNER, *Administrative Patent Judges*.

TURNER, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellants appeal under 35 U.S.C. § 134 from a final rejection of claims 1-20. We have jurisdiction under 35 U.S.C. § 6(b). We affirm-in-part.

STATEMENT OF CASE

Appellants disclose emissive display devices and methods of displaying images on such devices that reduce the luminance decay of emissive elements. (Specification 1: 5-8). The system accomplishes this by

moving static images slightly, such that those movements are substantially undetectable to viewers. (Specification 3:2-10).

Independent claim 1 reads as follows:

1. A method of reducing luminance decay of emissive elements in a matrix addressed emissive display device, the method comprising:

generating in a graphics engine control data corresponding to a static image to be displayed and generating drive signals as a function of the control data in a drive circuit, wherein the control data defines an image origin of the static image with respect to a display origin;

providing the drive signals to the matrix to thereby energize the corresponding emissive display elements of the matrix in order to display the static image on the matrix; and

altering in the graphics engine the control data, substantially continuously, such that the drive signals are substantially continuously altered to thereby substantially continuously move the static image on the matrix in a manner which is substantially undetectable to viewers of the display device, wherein the control data is altered by redefining the image origin of the static image with respect to the display origin.

Independent claim 8 reads as follows:

8. A matrix addressed emissive display device, comprising:

a matrix of individually addressable emissive display elements;

a graphics engine adapted to generate control data corresponding to a static image to be displayed on the matrix;

display drive circuitry coupled to the graphics engine and adapted to generate drive signals as a function of the control data, the drive signals being provided to the matrix to thereby

energize the corresponding emissive display elements of the matrix in order to display the static image on the matrix; and

wherein the graphics engine alters the control data, substantially continuously, such that the drive signals are substantially continuously altered to thereby substantially continuously move the static image on the matrix in a manner which is substantially undetectable to viewers of the display device.

Independent claim 15 recites similar subject matter to that of claim 8.

The prior art relied upon by the Examiner in rejecting the claims on appeal is:

Henderson	US 4,127,796	Nov. 28, 1978
Cappels	US 5,821,917	Oct. 13, 1998
Marflak	US 6,369,851 B1	Apr. 9, 2002

The Examiner rejected claims 1-3, 5-10, 12-17, 19 and 20 under 35 U.S.C. § 103(a) as being obvious over Henderson and Cappels. Claims 4, 11 and 18 were rejected under 35 U.S.C. § 103(a) as being obvious over Henderson, Cappels and Marflak.

Appellants contend that Henderson and Cappels fail to teach the benefits of the instant application, including the reduction of luminance decay. Appellants also argue that Henderson does not disclose using control data to move a static image or use of an image origin to move an on-screen image. Appellants also argue that both Henderson and Cappels have different purposes than the instant application and inadequate motivation to combine Henderson and Cappels has been offered in the rejection. (Br. 6-34). The Examiner indicates that he is not convinced by Appellants' arguments and refers back to the rejections of the claims. (Answer 11-12).

We affirm-in-part.

ISSUES

- 1) Have Appellants shown that the Examiner erred in rejecting claims 1-3, 5-10, 12-17, 19 and 20 over Henderson and Cappelletti?
- 2) Have Appellants shown that the Examiner erred in rejecting claims 4, 11 and 18 over Henderson, Cappelletti and Marflak?

FINDINGS OF FACT

1. Appellants disclose a matrix addressed emissive display device that seeks to reduce luminance decay of those emissive elements, as compared to prior display devices. The display device has a matrix of individually controllable emissive elements and an image displayed is slightly moved, substantially undetectable to viewers. (Specification 1:6-8, 5:20 – 6:3 and 7:4-16; Figs. 2A and 2B, elements 110, 210, 220A and 220B).

2. The Specification explicitly discloses that “[m]atrix addressed emissive display devices utilize a matrix or array of emissive display elements or pixels which are individually controllable to display an image.” The Specification also explicitly discloses that “matrix emissive display devices which are used to continuously or frequently display static images will experience decay of the emissive elements more rapidly.” (Specification 1:6-8, 2:2-4 and 2:9-11).

3. Henderson discloses methods that minimize damage to a phosphorescent screen of a cathode ray tube (CRT). Henderson accomplishes this by adding an additional signal to the beam deflection voltages, so that the electron scan pattern, i.e. the image, is constantly moved over an infrequently recurring path, such that it is imperceptible to

the viewer. The additional signals come from X and Y offset waveform generators and are used to generate summation signals to drive the deflection signals. (Abstract; Col. 2, l. 28 – col. 3, l. 22; Figs. 1-3, elements 1, 13, 16, 21, 22).

4. Henderson, in Fig. 3, illustrates a pattern resulting in the continuous and linear change in phase angle difference, with the X and Y axes having an origin, which is moved based on the changes to the signal. The parameters of the offset waveforms can be determined for values selected for the circuit. (Col. 3, ll. 23-58, col. 4, ll. 35-60; Fig. 3, elements 28-30).

5. Henderson discloses CRTs and their uses, but does not disclose any types of emissive display devices having a matrix of emissive display elements.

6. Cappels is directed to a system and methods of compensating for the effects of aging of phosphors and faceplate upon color accuracy in a CRT. The system includes a host processor that communicates with an internal processor via a digital data bus and produces drive signals to the video amplifiers of the video display. (Col. 4, 1-27; Fig. 2, elements 10 and 23).

7. Cappels also discloses that other display devices such as plasma displays and light emitting diodes (LEDs), having various signal-receiving electrodes, may be used in place of CRTs, in the context of that invention. (Col. 6, ll. 39-41).

8. Marflak is directed to methods and apparatus to minimize burn lines on a display. Marflak describes a projection-type television receiver that has a CRT, a mirror and a display screen. There does not appear to be

any explicit disclosure of a field effect display matrix in Marflak. (Col. 4, ll. 30-58; Fig. 3, elements 308, 320 and 322).

PRINCIPLES OF LAW

The Examiner bears the initial burden of presenting a prima facie case of obviousness. *In re Oetiker*, 977 F.2d 1443, 1445 (Fed. Cir. 1992). If that burden is met, then the burden shifts to the Appellants to overcome the prima facie case with argument and/or evidence. *In re Mayne*, 104 F.3d 1339, 1342 (Fed. Cir. 1997).

The claim preamble must be read in the context of the entire claim. The determination of whether preamble recitations are structural limitations or mere statements of purpose or use "can be resolved only on review of the entirety of the [record] to gain an understanding of what the inventors actually invented and intended to encompass by the claim." *Corning Glass Works v. Sumitomo Elec. U.S.A., Inc.*, 868 F.2d 1251, 1257 (Fed. Cir. 1989).

The analysis need not seek out precise teachings directed to the specific subject matter of the claim but can take into account the inferences and the creative steps that a person of ordinary skill in the art would employ. *KSR Int'l Co. v. Teleflex Inc.*, 127 S.Ct. 1727, 1741 (2007). "[I]f a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill." *Id* at 1740.

Discovery of latent qualities in an old invention and adapting it to a useful end does not make the discovery patentable. "Where there has been use of an article . . . more than a new advantage of the product must be

discovered in order to claim invention.” *General Elec. Co. v. Jewel Incandescent Lamp Co.*, 326 U.S. 242, 249 (1945).

ANALYSIS

Appellants argue that Henderson does not disclose a device that utilizes a graphics engine to generate or alter the image on a display using display drive signals or circuitry and relies on analog methods to supply movement to the image. However, as made clear in the rejections of claims 1, 8 and 15, Cappels is relied upon for its disclosure of multiple processors exchanging data over a bus. (Finding of Fact 6). While it is true that Henderson relies on analog methods to achieve the prevention of burn-in on CRTs, we agree with the Examiner that the combination of Henderson and Cappels renders obvious the generating and altering of control data as recited in the independent claims.

Appellants also argue that Henderson and Cappels do not disclose the use of an image origin to move an on-screen image and that Henderson merely discloses the use of an arbitrary position that is not adjusted through control data. However, Henderson discloses X and Y axes for the on-screen image, where those axes have an origin. (Finding of Fact 4). The disclosed movement of the on-screen image would produce, through the X and Y axis offset waveforms, a relative change in the origin of the image. As such, we agree with the Examiner that this disputed element of claims 1, 8 and 15 is disclosed or rendered obvious by Henderson.

Appellants contend that Henderson and Cappels fail to teach the benefits of the instant application, including the reduction of luminance decay. With respect to independent claims 8 and 15, Appellants allege that

the claimed devices “relate to reducing the *decay rate* of emissive elements.” (Br. 12 and 15, emphasis in original). However, neither claim recites the reduction of the decay rate of emissive elements or some equivalent thereof. As such, the fact that these apparatuses may “relate” to some benefit of the application is immaterial to the determination of whether all of the elements of claims 8 and 15 are taught or suggested by the cited prior art. We find that all of the elements of claims 8 and 15 have been taught or suggested, as provided in the rejections of those claims.

With respect to claim 1, that claim specifically recites that the method is for “reducing luminance decay of emissive elements in a matrix addressed emissive display device.” In rejecting claim 1, the Examiner recites this language and parenthetically indicates that Henderson’s CRT display anti-burn circuit is an equivalent thereof. The final Office Action and the Examiner’s Answer do not supply any discussion of the equivalence of reduction of luminance decay and prevention of burn-in, which is the crux of Appellants’ argument. If such equivalence is to be presumed in the rejection, it should be made explicitly.

Nonetheless, we are convinced, by the Examiner’s rejection, that all of the method steps of claim 1 are disclosed or rendered obvious by Henderson and Cappels. Based on the above discussion, Appellants have not persuaded us that the recited method steps are not taught or suggested by Henderson and Cappels. Cappels discloses that its technique for compensation for color degradation can be used in other display types, (Finding of Fact 7), to improve the functioning of those displays. This suggests that color correction or other benefits might flow from

implementing the methods of Cappels on an LED or plasma display. As such, if the method steps were performed as suggested in a matrix addressed emissive display device, the reduction of luminance decay would evidently occur, assuming the correctness of Appellants' application. The reduction in luminance decay is an additional benefit of a method rendered obvious by the teachings of the prior art. The discovery of additional benefits upon the implementation of an old invention does not make the discovery patentable. Thus, we affirm the rejection of claim 1 over Henderson and Cappels.

Appellants also argue that both Henderson and Cappels have different purposes than the instant application and inadequate motivation to combine Henderson and Cappels has been offered in the rejection. We find the motivation supplied in the rejection to be sufficient to combine because both Henderson and Cappels seek to improve the appearance of displayed images. The fact that Henderson and Cappels have different purposes is immaterial, as long as the combination teaches or suggests all of the elements of the claims, as discussed above.

With respect to rejection of claims 5-7, 12-14, 19 and 20, Appellants argue that Henderson does not disclose that control data is generated for each element of the display based on the element's position relative to an origin. Appellants argue that Henderson only discloses the use of an arbitrary position, which is not adjusted through control data. As discussed above, Henderson discloses X and Y axes for the on-screen image, where those axes have an origin. (Finding of Fact 4). The X and Y axis offset waveforms are adjusted through generator circuits that produce control data that determine the rate and the amplitude of the displacement, where this

will vary over the surface of the CRT. (Finding of Fact 4). As such, we find that the disputed elements of claims 5-7, 12-14, 19 and 20 are disclosed or rendered obvious by Henderson. We also note that with respect to claims 2, 3, 9, 10, 16 and 17, Appellants have not proffered separate arguments for those claims.

With respect to the rejection of claims 4, 11 and 18, Appellants argue that Marflak does not disclose a field effect display matrix, where such a matrix is indicated as having liquid-crystal cells sandwiched between polarizers. (Br. 25). We agree with Appellants in that we can find no recitation of a field effect display in Marflak. The Examiner's rejection makes specific reference to a "flat cathode ray tube," (Answer 8), and indicates that this element corresponds to a field effect display, but the Examiner has provided no support for such equivalence in the rejection. If the Examiner's intent is to find either of the elements as equivalents of each other, such a finding needs to be made explicitly. As such, we find the Examiner erred in rejecting claims 4, 11 and 18 over Henderson, Cappelis and Marflak.

CONCLUSION OF LAW

The decision of the Examiner rejecting claims 1-3, 5-7, 8-10, 12-17, 19 and 20 under 35 U.S.C. § 103 based on Henderson and Cappelis is affirmed. The 35 U.S.C. § 103 rejection of claims 4, 11 and 18 based on Henderson, Cappelis and Marflak is reversed.

DECISION

The rejection of claims 4, 11 and 18 is reversed and the rejection of claims 1-3, 5-10, 12-17, 19 and 20 is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED-IN-PART

| idl/gvw

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